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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,301	08/14/2001	Richard Scheps	79898	8562

7590 05/09/2003

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EXAMINER
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NGUYEN, TUAN M

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 05/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/929,301

Applicant(s)

SCHEPS, RICHARD

Examiner

Tuan M Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-68 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-68 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

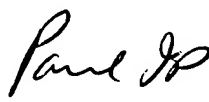
- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

  
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## **DETAILED ACTION**

### ***Drawings***

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1- 68 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding to claims 1, 13 and 21, the claims recite first/second upconversion “laser” optically coupled to the second beam splitter for generating a beam of green/red light from the first beam of blue light. The upconversion “laser” is inconsistently and misleading which render the claims confusing, vague and indefinite.

Regarding to claims 21, the claim recites a blue laser for generating a first beam of blue light and “a second beam of blue light”. The claim recites a second bam of blue light without a splitter which can be used to generating “a second beam of blue light” which render the claim confusing, vague and indefinite.

Regarding to claims 47 and 55, the claims recite means for generating a beam of red light and a beam of green light from the first beam of blue light . Further claim 55 recites means for generating a first beam of blue light and a second beam of blue light. It is improperly used with

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one means plus more than one function which renders the claims confusing, vague and indefinite.

### DETAILED ACTION

#### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-21, 35, 47 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moulton ('190) in view of Chwalek et al ('919).

With respect to claims 1, 13, 21, 35, 47 and 55, Moulton discloses three color coherent light system comprising a laser (10) produces an output beam (12), beam splitters (17, 19, 25 and 29), which generating the green light at 523.5 nm, a blue light at 455nm and a red light at 618nm. However Moulton does not discloses first/second upconversion laser, note col. 2 line 38

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to col. 4 line 67, see fig 1. Whereas Chwalek et al shows in figures 1-4 a multi-wavelength upconversion waveguide laser, note col. 3 line 55 to col. 7 line 55. For the advantageous of three color coherent light system, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Moulton with the upconversion laser as taught or suggested by Chwalek.

With respect to claims 2 and 14, Moulton discloses laser source may include a solid state laser, note col. 3.

With respect to claims 3 and 15, Chwalek et al discloses upconversion laser comprises a laser gain element, see figs. 1-2.

With respect to claims 4, 6 and 17-20, Chwalek et al disclose the input coupler is reflective coating (8) on an end face of the laser gain element, see figs. 1-2.

With respect to claims 5 and 16, Moulton discloses the laser gain element is a Pr: YALO crystal, note col. 6.

With respect to claims 7-12, Moulton discloses the beam splitters for directing the blue, green and red light beam in parallel and the single beam (12) is combined of red, green and blue light, see fig. 1.

6. Claims 22-34, 36-46, 48-54 and 56-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moulton ('190) in view of Chwalek et al ('919) further in view of Halldorsson et al ('489.

With respect to claims 22-23, Moulton and Chwalek et al disclose all limitations as set forth in claims 1 and 21 except for red/green/ blue lights are combined into a single collinear

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beam and single collinear beam is substantially white. Whereas Halldorsson et al disclose red/green/ blue lights are combined into a single collinear beam and single collinear beam is substantially white, note col. 3. For the advantageous of three color coherent light system, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Moulton and Chwalek et al with the for red/green/ blue lights are combined into a single collinear beam as taught or suggested by Halldorsson et al.

With respect to claims 24, 36 and 48, Moulton discloses laser source may include a solid state laser, note col. 3.

With respect to claims 25-26, 37-38 and 49, Chwalek et al disclose the upconversion laser comprising a laser gain element and the input coupler comprises either a plane mirror or a reflective coating on an end face of the laser gain element, note cols. 3-4, see figs. 1-3.

With respect to claims 27-34, 39-46 and 50-54, Moulton discloses the laser gain element is a Pr:YALO crystal, and the single beam of combined light is substantially white, note col. 2 line 38 to col. 6 line 64.

With respect to claims 56-57, Halldorsson et al disclose the blue, red, green light are combined into a single collinear beam, note col. 3.

With respect to claims 58-68, Moulton discloses at least one of the means for generating is a solid state laser, the laser gain element is a Pr:YALO, the red light, blue light and green light are combined into a single light, note col. 2 line 38 to col. 9 line 10, see fig. 1.

#### **Citation Of The Pertinent References**

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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The patent to Wallenstein (US patent 6,233,025) discloses process and apparatus for generating at least three laser beam of different wavelength for the display of color video pictures.

The patent to Conemac (US patent 6,134,050) discloses laser beam mixer.

The patent to Nam et al (US patent 5,644,584) discloses tunable blue laser diode.

The patent to Holly (US patent 4,866,720) discloses multicolored laser diode.

***Communication Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan M Nguyen whose telephone number is (703) 306-0247. The examiner can normally be reached on 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.



Paul Ip  
SPE  
Art unit 2828

TMN  
April 29, 2003